NOVA SCOTIA

The potential is here.

BARITE, CELESTITE AND FLUORITE

Active mines, former mines and deposits of barite, celestite and fluorite are numerous in northern Nova Scotia.

- The former barite mine at Walton was a world class deposit (produced 4.5 million tonnes of 90% $BaSO_4$).
- Production of pharmaceutical-grade barite continues at the Brookfield Nystone Deposit.
- The Lake Ainslie-Scotsville area has been a past producer of barite and fluorite, and contains an open-ended, drill-indicated resource of 4.3 million tonnes of ore grading at 36.7% $BaSO_4$ and 18.5% CaF_2.
- Loch Lommond was the site of a former celestite mine (1.5 million tonnes of 30-60% SrO).
- Pine Brook is a significant barite occurrence and a former small-scale producer.
- Celestite is also found at Beckwith in Cumberland County.

Barite fan on MnO >

Multi-coloured cubic crystals of fluorite from Nova Scotia v

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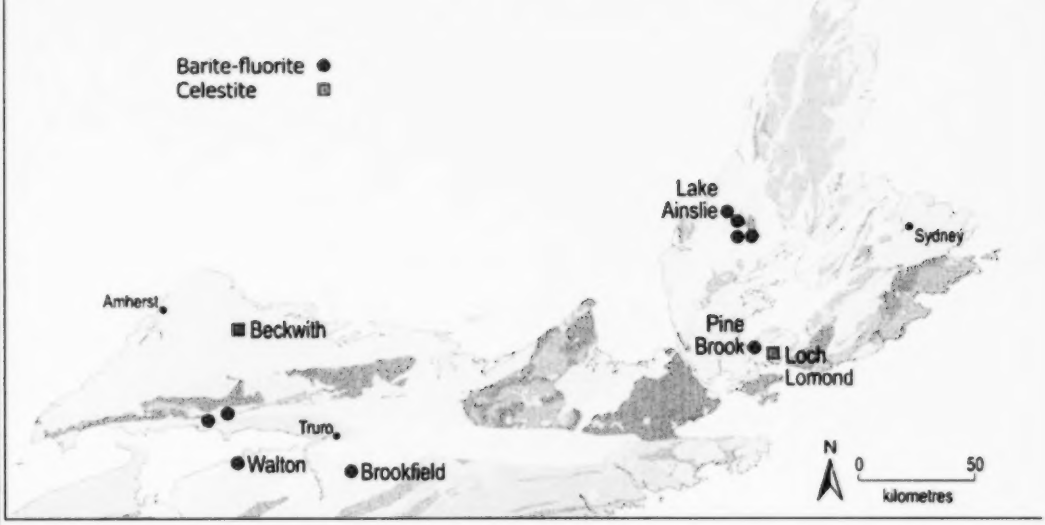

Map of northern Nova Scotia showing barite-fluorite and celestite deposits

Uses of Barite, Celestite and Fluorite

Approximately 80% of barite ($BaSO_4$) is used in the oil and gas industry as a component of drilling mud. The remainder is used in the glass industry to help homogenize the melt, in rubber and plastics as a heavy filler, in the pharmaceutical industry for X-rays, in over 2000 other chemical uses, and as a radiation-absorbent aggregate in specialty concrete for nuclear facilities.

Celestite (SrO) is the primary source of strontium used by industry. Approximately 95% of the world production is used in the chemical industry and the remaining 5% is used in the production of electrolytic zinc. Celestite is used for radiation protective glass plates, greases, the pyrotechnic industry, permanent magnets, alloys, anti-corrosive paints, ceramics, and pharmaceuticals.

Fluorite (CaF_2) has three primary consumers: the chemical industry, ceramics, and the iron and steel industries. In the chemical industry the primary use is in the aluminum-making process, but it is also used for glass etching and polishing, and as a catalyst for high-octane fuels. Large quantities of fluorite are consumed by ceramics producers in the making of opal glass.

Geological Setting

Barite, fluorite and celestite in northern Nova Scotia occur in two different types: (1) as veins related to faulting, and (2) as minerals replacing carbonate. These industrial minerals are usually spatially related to the Lower Carboniferous sandstones, limestones and evaporites of the Maritimes Basin. At Lake Ainslie the mineralized veins are up to 15 m thick and are hosted by Late Devonian volcanic rocks immediately below the Carboniferous strata. Celestite at Loch Lomond occurs in carbonates as stratabound, stratiform replacement lenses up to 9 m thick.

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